State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #_____
HRI #_____
Trinomial_____
NRHP Status Code_____
Other Listings_____
Review Code_____ Reviewer_____ Date_____

 Resource name(s) or number(assigned by recorder) N-227C

P1. Other Identifier: 8' X7' Supersonic Wind Tunnel, Unitary Plan Wind Tunnel
***P2. Location:** ☒Not for Publication ☐Unrestricted ***a. County** Santa Clara
***b. USGS 7.5' Quad** San Francisco North, Calif. **Date:** 1995
***c. Address** 320 Warner Road **City** Moffett Field **Zip** 94035
***e. Other Locational Data:**

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries.) N-227C is located on the south side of building N-227 and was built to house the 8' X 7' supersonic wind tunnel. N-227C is steel framed and clad with standing seam metal panels, and is two stories in height. The roof is flat and the only fenestration on the wind tunnel consists of flush steel doors and louvers. The wind tunnel connection occurs on the east and west sides of the building.

For technical description, see Continuation Sheets. Also, for more information, refer to DPR 523 Form A for Buildings N-227, N-227A and N-227B.

This building appears to be in good condition.

***P3b. Resource Attributes:** (list attributes and codes) HP 39 – Other: Wind Tunnel

***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other

P5a. Photo

P5b. Photo: (view and date)
View of west façade (8/12/05)

***P6. Date Constructed/Age and Sources:** 1955

***P7. Owner and Address:**
United States of America as represented by National Aeronautics and Space Administration (NASA)

***P8. Recorded by:**
Page & Turnbull, Inc.
724 Pine Street
San Francisco, CA 94108

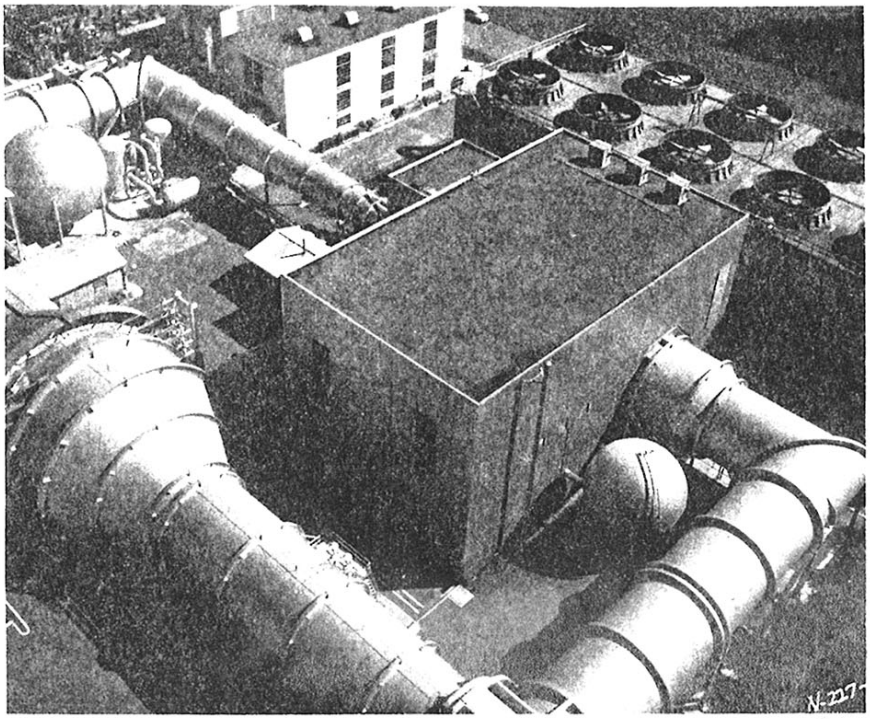
***P9. Date Recorded:** 08/12/05

***P10. Survey Type:**
Reconnaissance

***P11. Report Citation:** National Aeronautics and Space Administration, *Technical Facilities Catalog*, Volume 1, publication NHB 8800.5A (1), October 1974; Technical Information Division, Ames Research Center, *Ames Research Facilities Summary,* 1974; Donald D. Baals and William R. Corliss, *Wind Tunnels of NASA,* NASA SP-440, 1981.

***Attachments:** ☐None ☐Location Map ☐Sketch Map ☒Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (list)

N 227C



DESCRIPTION

The 8-ft by 7-ft supersonic wind tunnel is a closed-return, variable-density tunnel with an 8-ft x 7-ft rectangular test section. The nozzle has flexible side walls with fixed upper and lower surfaces. The air is driven by an 11-stage, axial-flow compressor powered by 4 wound-rotor induction motors. The same motors and compressor serve the 9-ft x 7-ft supersonic wind tunnel. (See the preceding resume.) The speed of the motors is continuously variable over the operating range. The motors have a combined output of 180,000 hp for continuous operation, or 216,000 hp for one hr.

CHARACTERISTICS

Mach Number:	2.45 to 3.5, continuously variable
Reynolds Number, per ft:	1.0×10^6 to 5.0×10^6
Stagnation Pressure, atm:	0.3 to 2.0
Stagnation Temperature:	580°R
Test-Section Height, ft:	8.0
Test-Section Width, ft:	7.0
Test-Section Length, ft:	16.0
Test-Section Access, ft:	Side Access Door: 8.0 high x 10.0 long Top Access Hatch: 2.0 wide x 4.5 long

6c. EIGHT-BY SEVEN-FOOT SUPERSONIC WIND TUNNEL

DESCRIPTION:

The Eight- by Seven-Foot Supersonic Wind Tunnel is a closed-return, variable-density tunnel equipped with a symmetrical, flexible-wall throat (the sidewalls are positioned by a series of jacks operated by hydraulic motors). The upper and lower surfaces are fixed. Airflow is produced by an eleven-stage, axial-flow compressor powered by four variable-speed wound-rotor induction motors.

For conventional, steady-state testing models are generally supported on a sting. Internal, strain-gage balances are used for measuring forces and moments. (Additional facilities are available for measuring multiple steady or fluctuating pressures.)

A schlieren system is available for studying flow patterns by direct viewing or photography, as well as a system for obtaining 20-by 20-inch shadowgraph negatives.

PERFORMANCE:

Mach Number	2.45 to 3.5 (continuously variable)
Stagnation Pressure	0.3 to 2.0 atmospheres
Reynolds Number	1.0×10^6 to 5.0×10^6 per foot
Stagnation Temperature	580° R

DIMENSIONS: Test Section

Height	8.0 feet
Width	7.0 feet
Length	16.0 feet
Access	Top hatch — 2.0 X 4.5 feet
	Side door — 8.0 X 10.0 feet

STATUS:

Operational since 1956

JURISDICTION:

Aeronautics Division
Experimental Investigations Branch
Stuart Treon

LOCATION:

Building N-227C